

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference P26252PC00HJB	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL 02/00526	International filing date (<i>day/month/year</i>) 02.08.2002	Priority date (<i>day/month/year</i>) 02.08.2002
International Patent Classification (IPC) or both national classification and IPC B01J19/00		
Applicant AVANTIUM INTERNATIONAL B.V. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 23.02.2004	Date of completion of this report 04.08.2004	
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Strohmayr, B Telephone No. +49 89 2399-2669	



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NL 02/00526

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-6 as originally filed

Claims, Numbers

1-25 as originally filed

26-38 received on 30.06.2004 with letter of 29.06.2004

Drawings, Sheets

1-3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 02/00526**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-13,15,16,19-22,24,26-38
	No: Claims	1,14,17,18,23,25
Inventive step (IS)	Yes: Claims	
	No: Claims	1-38
Industrial applicability (IA)	Yes: Claims	1-38
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL02/00526

D1=US5866342
D2=WO0141918

Section V

1.1. The subject matter of independent claim 1 is not new, since D1 discloses

an assembly for performing parallel chemical experiments (col.4, para. 2), said assembly comprising:

- a main body (72, fig 4A) having a first and a second face on opposite sides thereof (see fig. 4A), multiple bores (30, fig.4) extending through said main body between said first and second face,
- tubular liners (62, figs. 4, 4A) having openings at opposite ends thereof, each liner removably fitting in a bore in the main body (implicitly disclosed in col.5, lines 28-39),
- first closure means (74, 58, 60, fig. 4A) for closing the openings of the liners at the first face of the main body (see fig. 4A),
- second closure means (70, 58, 60, fig. 4A) for closing the openings of the liners at the second face of the main body (see fig. 4A),
- said first and second closure means being fastenable to said main body, so that an experimentation chamber is defined within each liner (see col.6, para. 4).

1.2. The subject matter of independent use claim 23 is also not new for analogous reasons.

2. Dependent claims

2.1. Claim 14 is interpreted as depending on claim 1 for the following reasons: lines 7 to 9 of claim 14 appear to be grammatically incorrect and appear to contain erroneously a repetition of the first line of claim 14. After correction of this error, i.e. after removal of said repetition lines 7 to 9 would read "an experimentation assembly according to one or more of the preceding claims ..." and thus define a claim depending on claim 1.

2.2. Claims 26 and 36 contain all features of claim 1 and thus depend on claim 1 within the meaning of Rule 6.4a PCT. However claims 26 and 36 infringe said Rule and Art. 6 PCT (requirement of conciseness), since they repeat explicitly all features of claim 1 instead of referring to claim 1 and defining only the additional features.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL02/00526

2.3. For analogous reasons claims 24, 25 and 33 depend on independent use claim 23, but lack a reference to claim 23.

2.4. The subject matters of dependent claims 14,17,18 and 25 are not new:

Regarding claim 14, document D1 discloses a system comprising an experimentation assembly according to claim 1 (see the argumentation with respect to claim 1 above) and a filtration device (60, fig. 4A) having channels with inlets (40, fig. 4A) corresponding to the bores in the main body and a filter in each channel (see fig. 4). The further features defined in claim 14 relate to the use of the apparatus rather than to the apparatus in terms of its technical features. These features are therefore not taken into consideration when judging novelty and inventive step of the apparatus. As document D1 discloses all features of claim 14 relating to the apparatus, claim 14 is not novel over D1.

With respect to claim 17 document D1 discloses an experimentation assembly according to claim 1 (see argumentation above) and heating means for heating the content in the experimentation chambers (col.5, lines 40-50).

For the additional features of claim 18 see Fig.4 and col.5, l.39-65 of D1.

Regarding claim 25, document D1 discloses the use of an assembly according to claim 1 for solid form screening of molecules (col.3, lines 57ff).

2.5. The subject matters of dependent claims 2-13,15,16,19-22,24,26-38 is not inventive.

C L A I M S.

(100)

26. An assembly (1) for performing parallel chemical experiments, in particular crystallisation experiments, said assembly comprising: a main body (2) having a first (3) and a second face (4) on opposite sides thereof, multiple bores (5) extending through said main body between said first and second face,

liners (6) each having an opening at the first face of the main body, each liner (6) removably fitting in a bore in the main body, the liners are each provided at the first face of the main body with at least one outwardly directed support projection, such as a circumferential support flange, and the bores in the main body are each provided with a corresponding recess for receiving the support projection,

first closure means (10) for closing the openings of the liners at the first face of the main body, which first closure means comprise one or more elastic first sealing members and a first cover plate, so that said first sealing members are interpositioned between the ends of the liners and the first cover plate
said first closure plate (15) being fastenable to said main body, so that a closed experimentation chamber (20) is defined within each liner (6),

characterized in that the liners (6) are tubular liners, each liner also having openings (7,8) at opposite ends thereof, in that second closure means (15) are provided for closing the openings of the liners at the second face of the main body, said second closure means comprising one or more second elastic sealing members and a second cover plate which is fastenable to the main body, so that said second sealing members are interpositioned between the ends of the tubular liners and the second cover plate.

27. Assembly according to claim 26, wherein said first closure means comprise multiple first sealing members, each first sealing member engaging an end face of a liner.

28. Assembly according to claim 27, wherein the first face of the main body and/or the first cover plate is provided with recesses at

the locations of the liner ends for receiving a first sealing member.

29. Assembly according to claim 26, wherein said second closure means comprise multiple second sealing members, each second sealing member engaging an end face of a liner.

30. Assembly according to claim 29, wherein the second face of the main body and/or the second cover plate is provided with recesses at the locations of the liner ends for receiving a second sealing member.

31. Assembly according to claim 26, wherein the first and/or second cover plate is provided with bores extending in line with the bores in the main body, and wherein the first and/or second sealing members are pierceable, such that e.g. a needle can be inserted into each experimentation chamber.

32. Assembly according to claim 27 or 29, wherein the first and/or second sealing members are sealing discs.

33. A method for performing parallel chemical experiments, in particular crystallisation experiments, wherein use is made of a system comprising:

- an assembly (1) for performing parallel chemical experiments, in particular crystallisation experiments, said assembly comprising:
 - a main body (2) having a first (3) and a second face (4) on opposite sides thereof, multiple bores (5) extending through said main body between said first and second face,
 - tubular liners (6) having openings (7,8) at opposite ends thereof, each liner removably fitting in a bore in the main body,
 - first closure means (10) for closing the openings of the liners at the first face of the main body,
 - second closure means (15) for closing the openings of the liners at the second face of the main body,
 - said first and second closure means (15,16) being fastenable to said main body, so that an experimentation chamber (20) is defined within each liner (6),

and

- a filtration device having channels with inlets corresponding to the bores in the main body of the experimentation assembly and a filter in each channel, so that - after removal of the top cover plate of the experimentation assembly when in horizontal position and of the associated sealing member(s) - said filtration device is brought against the top face of the main body, after which said system is reversed and the contents of the experimentation chambers enters said channels in the filtration device and is filtered.

34. A method according to claim 33, wherein said channels in said filtration device have outlets and wherein said system further comprises a collecting device having collecting chambers with inlets corresponding to the outlets of the filtration device, such that the filtered contents of the experimentation chambers enters said collecting chambers.

35. A method according to claim 33 or 34, wherein crystallisation is effected in the experimentation chambers.

36. A system for performing parallel chemical experiments, in particular crystallisation experiments, said system comprising:

- an assembly (1) for performing parallel chemical experiments, in particular crystallisation experiments, said assembly comprising:
 - a main body (2) having a first (3) and a second face (4) on opposite sides thereof, multiple bores (5) extending through said main body between said first and second face,
 - tubular liners (6) having openings (7,8) at opposite ends thereof, each liner removably fitting in a bore in the main body,
 - first closure means (10) for closing the openings of the liners at the first face of the main body,
 - second closure means (15) for closing the openings of the liners at the second face of the main body,
 - said first and second closure means (15,16) being fastenable to said main body, so that an experimentation chamber (20) is defined within each liner (6),

and

- heating means for heating the content in the experimentation chambers, e.g. for evaporating a solvent or bringing a solid into solution and effecting crystallisation by subsequent cooling, wherein said main body is a solid body of a heat conducting material, preferably a metal, and wherein said heating means are mounted in said main body and/or cover plate(s) or are adapted to contact said main body and/or cover plate(s),
- and wherein the first and/or second closure means comprise sealing members which are pierceable, such that e.g. a needle can be inserted into each experimentation chamber, and wherein the system further comprises a vapour discharge assembly, said vapour discharge assembly comprising multiple hollow needle members, each adapted to be pierced through a sealing member so that vapour discharges via said hollow needle.

37. A system according to claim 36, wherein said needles are upwardly directed and arranged to pierce through the sealing members

sealing the bottom face of the experimentation assembly in horizontal orientation.

38. A system according to claim 36 or 37, wherein the system further comprises a feed assembly for feeding a substance into the experimentation chambers, said feed assembly comprising at least one hollow needle member adapted to be pierced through a sealing member.